

inwardly in the axial direction and outwardly in the radial direction with respect to the first groove 12. Located in the groove 12 is a sealing element 14, with a first axial sealing portion 15 placed securely onto the shoulder 1 and onto the stop ring 11. The second sealing portion 16 branches off from the first sealing portion 15 radially outwardly into the second groove 13 at its inner axial end in the form of a sealing lip. The sealing lip 16 deviates outward by a tilt angle  $\beta$  with respect to a perpendicular median so that the second groove 13 is divided into two partial spaces 20 and 21 that can be used as additional lubricant spaces. The sealing lip 16 forms a gap seal with the wall of groove 13 so that the penetration of dirt into the bearing interior is made more difficult.

Opposite the sealing lip 16, the third sealing portion 17 extends radially inwardly. It extends axially outwardly, offset by a tilt angle  $\alpha$  with respect to a perpendicular median so that portion 17 sits against shoulder 1 and against the stop ring 11 only at a point. As can be seen from FIGS. 2 and 3, the third sealing portion 17 of the sealing element is provided with slots 19 evenly spaced from one another around it. On one hand, these slots act as lubricant reservoirs and on the other hand enable unhindered lubricant flow through the bearing. This is done by passing lubricant into the track area 6 from the outside through axial grease bore 4 and radial grease bore 5. The lubricant is then able to exit the bearing through the slots 19 of the third sealing portion 17, through the labyrinthine seal between sealing lip 16 and notch 13, as well as through the gap between the outer race 10 and the first sealing portion 15. The first axial sealing portion 15 of the sealing element 14 is designed such that it nearly takes up all of the first groove 12 completely so that only a small gap is formed, thereby making the penetration of contaminants from the outside into the bearing interior more difficult.

In FIG. 4, the guide roller is shown with outer race 10 shifted from its neutral position toward the right in the direction of the arrow. As the outer race rotates, points of contact 22 and 23 are formed between sealing section 16 and the wall of the second groove 13 on the left side as well as between the transition area between the second and third sealing portions 16 and 17 and the opposite face of the outer race 10 on the right side. In this way, a frictional seal is created. If the outer race 10 moves in the direction opposite to the arrow, a friction seal again arises that in that case is formed by points of contact 24 and 25.

## References

- 1 Shoulder
- 2 Pin
- 3 Center Section
- 4 Axial grease bore
- 5 Radial grease bore
- 6 Inner track
- 7 Cage
- 8 Bearing needles
- 9 Outer track
- 10 Outer race
- 11 Stop ring

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## References

- 12 First groove
- 13 Second groove
- 14 Sealing element
- 15 First axial sealing section
- 16 Second sealing section, extending radially outwardly
- 17 Third sealing section, extending radially inwardly
- 18 Receiving opening
- 19 Slot
- 20 Partial space
- 21 Partial space
- 22 Point of contact
- 23 Point of contact
- 24 Point of contact
- 25 Point of contact
- $\alpha$ ,  $\beta$  Tilt angles

What is claimed is:

1. A guide roller with at least one roller body set and one inner race in the form of a pin (2) that is located inside of a receiving opening (18) of an outer race (10), whereby the inner race contains an axial flange at each outer end which is located inside a first groove (12) of the outer race (10) so that an axial shift of the outer race (10) with respect to the inner race is limited and whereby in the first groove (12), another groove (13) is present at each end that extends axially inwardly and radially outwardly and that contains a sealing element, the sealing element (14) is formed in one piece in a T-shape with a first axial sealing portion (15) located securely on the shoulder, a second sealing portion (16) that extends radially outwardly is located within the second groove (13) and a third sealing portion (17) that extends radially inwardly branches off from the first sealing portion (15) at an inner end thereof so that axial contact of the shoulder and the outer race (10) is prevented by the third sealing portion (17).

2. A guide roller according to claim 1, wherein the third sealing portion (17) extends in a direction that deviates radially from a perpendicular median by an angle  $\alpha$ .

3. A guide roller according to claim 1, wherein the third sealing portion (17) is provided with evenly spaced slots (19).

4. A guide roller according to claim 1, wherein the second sealing portion (16) extends in a direction that deviates radially from a perpendicular median by an angle  $\beta$ .

5. A guide roller according to claim 1, wherein the flange is formed by a shoulder (1) of the pin (2) on one side and by a stop ring (11) on the other side.

6. A guide roller according to claim 1, wherein the roller body set comprises bearing needles (8) guided by a cage (7).

7. A guide roller according to claim 1, wherein the pin (2) has an axially extending lubricant bore (4) with a radially extending lubricant bore (5) that branches therefrom, (5), which opens into a track area (6) of the roller body set.

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